

C l a i m s

1. Ear terminal comprising a sealing section (2) for arrangement in the meatus (3) of a human, comprising:
 - an inner microphone (M2) having a sound inlet (S2) for being directed directed into the meatus,
 - an electronics unit (11) coupled the inner microphone (M2) and also being coupled to a power supply (12) as well as
 - an outer microphone (M1) for converting acoustic signals in the environment into electrical signals.
2. Ear terminal according to claim 1, comprising a pressure alignment channel (T3) for slow air throughput to and from the meatus (3) through the sealing section (2).
3. Ear terminal according to claim 1, wherein the sound inlet (S2) is constituted by a canal (T2) between the microphone (M2) and the inward facing portion of the sealing section (2) and the meatus.
4. Ear terminal according to claim 2, wherein the pressure alignment channel (T3) includes a pressure release valve (V) arranged for opening if the pressure difference between the meatus and the environment of the user exceeds a predetermined limit.
5. Ear terminal according to claim 4, comprising a bypass channel (T4) in the pressure alignment channel (T3).
6. Ear terminal according to claim 1, comprising a connection interface (13,E12), e.g. a radio receiver or electric coupling, coupled to the electronics unit (11), said electronics unit being provided with conversion means (E7) for converting signals received from said interface and being coupled to the sound generator (SG) for transmitting acoustic

information to the user.

7. Ear terminal according to claim 1, comprising a connection interface (13,E12), e.g. a radio transmitter or electric coupling, coupled to the electronics unit (11), said electronics unit being provided with conversion means (E5) for converting signals received from the inner microphone (M2) for transmitting electric or electromagnetic information from the user.
8. Ear terminal according to claim 1, comprising a sound generator (SG) coupled to said electronics unit (11), wherein the electronics unit comprises analyzing means for active noise cancelling, e.g. by feedback of acoustic signals converted by at least one of said microphones (M1,M2) generated through said sound generator (SG).
9. Ear terminal according to claim 1, comprising a sound generator (SG) arranged for being directed toward the meatus and being coupled to said electronics unit (11), wherein the electronics unit (11) comprises filtering means for active sound transmission e.g. by amplification of chosen frequencies converted by said outer microphone (M1) and generated a corresponding acoustic signal through said sound generator (SG).
10. Ear terminal according to claim 1, comprising a sealing section (2) arranged for use in the ear meatus (3) of a human, in which the electronic unit (11) including filtering means coupled to said inner microphone for filtering the signal from said inner microphone (M2), said filtering means being programmable to transform the signals based on the sounds received in the ear by said inner microphone (M2) into sounds having essentially the characteristics of spoken sounds of the wearer of the ear terminal.

11. Ear terminal according to claim 10, comprising a connection interface (13,E12) for transmitting the filtered signal from the ear terminal;

12. Ear terminal according to claim 1, for protection of a users hearing comprising a sealing section (2) for acoustically sealing the meatus (3) of a human, comprising

a sound generator (SG) with a sound outlet (S_{SG}) for being directed toward the user meatus (3);

the electronics unit (11,E3) comprising a sound analyser coupled to said inner microphone (M2), for analyzing sound characteristics of the resulting sound field in the meatus (3), producing analyzed sound characteristics;

storing means in the electronics unit (11,E8,E9,E10) for storing measured predetermined sound characteristics of a properly functioning ear protecting device;

a comparing means in the electronics unit (11,E3) for comparing the inner microphone (M2) analyzed sound characteristics with the stored measured predetermined sound characteristics;

indicating means coupled to said comparing means (11,E3) for being activated if said analyzed sound characteristics differ significantly from said predetermined sound characteristics.

13. Ear terminal according to claim 1 comprising a sealing section (2) arranged for use in the ear meatus (3) of a human, and

an electronic unit (11) including filtering means coupled to said inner microphone for filtering the signal from said inner microphone (M2), said filtering means being programmable to transform the signals based on the sounds received in the ear by said inner microphone (M2) into sounds when combined with the users own voice, providing a voice sounding natural to the user.

14. Ear terminal according to claim 13, comprising a sound generator (SG) having a sound outlet arranged for being directed into the meatus, said electronic unit also comprising feedback suppression means for suppressing the feedback between the sound generator (SG) and the inner microphone (M2).

15. Ear terminal system comprising two ear terminals, at least the first of which being an ear terminal according to claim 13, said first ear terminal comprising a connection interface (13,E12) for transmitting the filtered signal from the ear terminal; into said second ear terminal arranged for being positioned in the opposite ear of the user, said second ear terminal comprising a corresponding connection interface (13,E12) and a sound generator (SG) for emitting the sound into said second ear.

16. Ear terminal according to claim 1, wherein the inner microphone (M2) has a sound inlet (S2) for being directed toward the meatus (3), arranged for converting a picked-up sound signal (S2) to an output signal (51); the ear protecting device also comprising a an electronics unit (11) including sound analyzing means arranged for analyzing the output signal (51) and comparing the signal with predetermined signals corresponding to acceptable noise limits and for activating an indicator (72) when detecting a passing of these limits.